

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 June 2004 (03.06.2004)

PCT

(10) International Publication Number  
**WO 2004/046456 A1**

(51) International Patent Classification<sup>7</sup>: **D21C 11/00**  
// 9/10

(21) International Application Number:  
**PCT/FI2003/000883**

(22) International Filing Date:  
19 November 2003 (19.11.2003)

(25) Filing Language: English ✓

(26) Publication Language: English

(30) Priority Data:  
20022068 20 November 2002 (20.11.2002) FI

(71) Applicant (for all designated States except US): **METSO PAPER, INC.** [FI/FI]; Fabianinkatu 9 A, FIN-00130 Helsinki (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **NURMINEN, Pasi** [FI/FI]; Hurstipolku 3 A 1, FIN-21200 Raisio (FI). **SUTELA, Timo** [FI/FI]; Käköläntie 12 As 8, FIN-21100 Naantali (FI). **KOSKINEN, Kimmo** [FI/FI]; Neuvoksen- tie 18 a 7, FIN-21280 Raisio (FI).

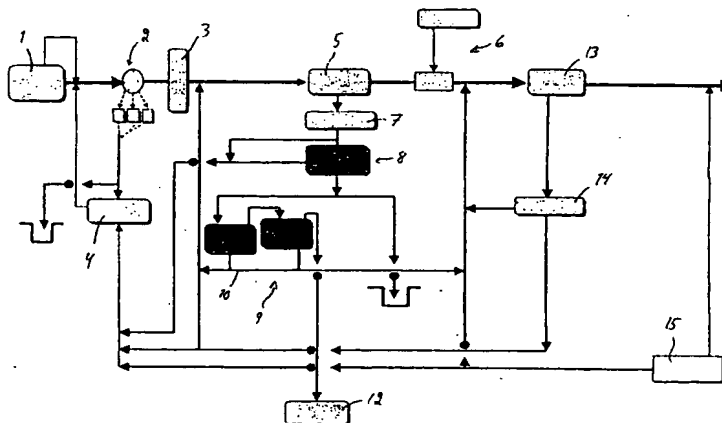
(74) Agent: **TURUN PATENTTITOIMISTO OY**; P. O. Box 99, FIN-20521 Turku (FI).

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, EG, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT (utility model), PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO utility model (BW), ARIPO patent (BW), ARIPO utility model (GH), ARIPO patent (GH), ARIPO utility model (GM), ARIPO patent (GM), ARIPO utility model (KE), ARIPO patent (KE), ARIPO utility model (LS), ARIPO patent (LS), ARIPO utility model (MW), ARIPO patent (MW), ARIPO utility model (MZ), ARIPO patent (MZ), ARIPO utility model (SD), ARIPO patent (SD), ARIPO utility model (SL), ARIPO patent (SL), ARIPO utility model (SZ), ARIPO patent (SZ), ARIPO utility model (TZ), ARIPO patent (TZ), ARIPO utility model (UG), ARIPO patent (UG), ARIPO utility model (ZM), ARIPO patent (ZM), ARIPO utility model (ZW), ARIPO patent (ZW), Eurasian patent

[Continued on next page]

(54) Title: METHOD AND ARRANGEMENT IN MAKING OF MECHANICAL PULP



(57) Abstract: The object of the present invention is a method and arrangement in making of mechanical pulp to reduce the amount of organic dissolved and colloidal substances in the pulp making process water by treating a part of the process water. According to the method the treating is carried out by leading the process water filtrate, separated from the pulp by a press (5) located before bleaching, to pre-treatment (8), where elongated fibres are fractionated from the process water to be treated. The filtrate that has passed the pre-treatment (8) is led to membrane filtration (9), where at least part of the organic dissolved and colloidal substances included in the process water are separated from the rest of the process water. The membrane filtration concentrate i.e. the colloidal and dissolved substances separated from the process water, is led to further treatment and the permeated i.e. the process water that has passed the membrane filtration is led back to the pulp making process. An arrangement according to the present invention comprises means to carry out the method according to the invention.

WO 2004/046456 A1